



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/623,417

07/18/2003

Sachin Navin Chheda

200308578-1

4994

22879 7590 08/24/2007  
HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

SUGENT, JAMES F

ART UNIT

PAPER NUMBER

2116

MAIL DATE

DELIVERY MODE

08/24/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

mn

<b>Office Action Summary</b>	<b>Application No.</b> 10/623,417	<b>Applicant(s)</b> CHHEDA ET AL.	
	<b>Examiner</b> James F. Sugent	<b>Art Unit</b> 2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This Office Action is sent in response to Applicant's Communication received June 21, 2007 for application number 10/623,417 originally filed July 18, 2003. The Office hereby  
5 acknowledges receipt of the following and placed of record in file: amended Claim 1-23  
(wherein claim 4 is canceled) are presented for examination.

#### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in  
37 CFR 1.17(e), was filed in this application after final rejection. Since this application is  
eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)  
has been timely paid, the finality of the previous Office action has been withdrawn pursuant to  
15 37 CFR 1.114. Applicant's submission filed on June 21, 2007 has been entered.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all  
obviousness rejections set forth in this Office action:

20 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in  
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are  
such that the subject matter as a whole would have been obvious at the time the invention was made to a person  
having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the  
25 manner in which the invention was made.

Art Unit: 2116

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3 and 5-15, 17-19, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fung (U.S. Patent Publication No. 2002/0004912 A1) (hereinafter referred to as Fung) in view of Loucks et al (U.S. Patent No. 5,650,936) (hereinafter referred to as Loucks).

As to claim 1, Fung discloses a system for power management of a rack of computers, the system comprising: server side infrastructure (SSI) circuitry (server module 402) at each computer in the rack, the SSI circuitry including local monitoring circuitry (activity indicator generator 406) coupled to a central processing unit (CPU) (404) of the computer (as argued in previous Office Action; paragraph 104, lines 4-15 and paragraph 107, lines 24-35); and, a centralized power management module (CPMM) (management module 430) with an out-of-band (OOB) management link to the SSI circuitry at each computer in the rack (as argued in previous Office Action; paragraphs 40-41 and paragraphs 84, 85, 90, 151-152 and paragraph 107, lines 21-32), wherein the CPMM (430) is configured to monitor power (via SM control unit and algorithm 432) being consumed by the CPUs by sending a polling message to the SSI circuitry at each computer in the rack (Fung discloses the SM control unit and algorithm 432 "retrieving" activity indicators which necessitates requesting and/or polling; paragraph 104, lines 4-15 and paragraph 107), wherein the local monitoring circuitry (406) within the SSI circuitry (402) at

Art Unit: 2116

each computer in the rack monitors is configured to monitor power consumption at the CPU and respond to the polling message from the CPMM by transmitting an activity indicator or power consumption value to the CPMM (Fung discloses activity indicators being retrieved from the local monitoring circuitry 406 and transmitted to SM control unit and algorithm 432 to be used for adjusting power management modes which is inclusive of power throttling; paragraphs 104, 105 and 107), and wherein the CPMM is further configured to apply a set of rules (as argued in previous Office Action) to the root mean squared power consumption values from the local monitoring circuitry to determine when and at which computers to enable and disable a CPU power throttling mode (paragraphs 107-108 and paragraphs 190-247), and wherein there is hysteresis between entry and exit of the power throttling mode such that power consumption values which induce throttling are higher than power consumption values at which throttling is removed (paragraph 310, lines 200-207 on page 43, column 1 and paragraph 337, lines 74-80 on page 50, column 2).

Fung fails to disclose the power value measured and sent to the CPMM is a root mean squared power consumption value.

Loucks teaches a power monitoring unit (100; column 5, line 66 thru column 6, line 1) that calculates the root mean squared voltage to be used to adjust the operation or configuration of the device (column 3, line 57 thru column 4, line 4 and column 7, lines 35-36 and column 8, lines 9-19). Loucks has the additional benefit of having the capability of minimizing storage space on the device in addition to processing power required by a master device (column 3, lines 48-51).

Art Unit: 2116

It would have been obvious to one of ordinary skill of the art having the teachings of Fung and Loucks at the time the invention was made, to modify the local monitoring circuitry of Fung to include the ability to measure a root mean squared power consumption value as taught by Loucks. One of ordinary skill in the art would be motivated to make this combination of having root mean squared value measurement capability in view of the teachings of Loucks, as doing so would give the added benefit of having the capability of minimizing storage space on the device in addition to processing power required by a master device (as taught by Loucks above).

As to claim 2, Fung in combination with Loucks taught the system of claim 1, as shown above. Fung further teaches the system wherein the rack of computers (server modules 54) comprises multiple servers mounted in the rack (paragraph 40).

As to claim 3, Fung in combination with Loucks taught the system of claim 1, as shown above. Fung further teaches the system wherein the rack of computers comprise a plurality of blade servers (server modules 54) in a blade chassis (as shown in figure 2; paragraph 40).

As to claim 5, Fung in combination with Loucks taught the system of claim 1, as shown above. Fung further teaches the system further comprising: a console (138) coupled to the CPMM (management module 430) for user interaction (paragraphs 50, 100 and 189).

As to claim 6, Fung in combination with Loucks taught the system of claim 5, as shown above. Fung further teaches the system wherein the console comprises a console (138) connected locally (via bus 140 or 142) to the CPMM (paragraphs 50 and 100).

As to claim 7, Fung in combination with Loucks taught the system of claim 5, as shown above. Fung further teaches the system wherein the console comprises a remote console (136)

Art Unit: 2116

coupled via a network (through the internet 132 via connection 134) to the CPMM (paragraph 126).

As to claim 8, Fung in combination with Loucks taught the system of claim 5, as shown above. Fung further teaches the system wherein the system is configured to enable a user to setup the aforementioned rules by way of the console (paragraphs 50, 100 and 189).

As to claim 9, Fung in combination with Loucks taught the system of claim 5, as shown above. Fung further teaches the system wherein the system is configured to enable a user to view power consumption data by way of the console (paragraphs 50, 100 and 189).

As to claim 10, Fung in combination with Loucks taught the system of claim 1, as shown above. Fung further teaches the system further comprising: additional CPMMs (one or more management modules 53 in figure 2) with management links (Link as shown in figure 12) to SSI circuitry (server modules 54) at additional racks of computers (Fung further discloses additional groups of computers referred to as server system units 52; paragraph 40); and a power management system coupled to the plurality of CPMMs (paragraphs 42 and 104-107).

As to claim 11, Fung in combination with Loucks taught the system of claim 10, as shown above. Fung further teaches the system wherein the power management system is configured to enable a user to view power consumption data and to customize the sets of rules applied by the CPMMs (paragraphs 50, 100 and 189).

As to claim 12, Fung disclose a server-side apparatus for a rack-mounted computer, the apparatus comprising: local monitoring circuitry (activity indicator generator 406) coupled to a central processing unit (CPU) (404) of the computer (server module 402) and coupled to a centralized power management system (SM control unit and algorithm 432 within management

Art Unit: 2116

module 430) which is configured to manage power for a rack of computers (as argued in previous Office Action; paragraphs 40-41 and paragraphs 104 and 107), wherein the local circuitry (406) is configured to monitor power consumption at the CPU (as argued in previous Office Action), transmit power consumption data to the centralized power management system (432), receive out-of-band polling messages from the centralized power management system, respond to the polling messages by transmitting an activity indicator or power consumption value to the centralized power management system, and send commands to enable and disable a power throttling mode at the CPU (Fung discloses the SM control unit and algorithm 432 “retrieving” activity indicators which necessitates requesting and/or polling; paragraph 104, lines 4-15 and paragraph 107) (Fung further discloses activity indicators being retrieved from the local monitoring circuitry 406 and transmitted to SM control unit and algorithm 432 to be used for adjusting power management modes which is inclusive of power throttling; paragraphs 104, 105, 107-108 and 190-247), and wherein there is hysteresis between entry and exit of the power throttling mode such that power consumption values which induce throttling are higher than power consumption values at which throttling is removed (paragraph 310, lines 200-207 on page 43, column 1 and paragraph 337, lines 74-80 on page 50, column 2).

Fung fails to disclose the power value measured and sent to the centralized power management is a root mean squared power consumption value.

Loucks teaches a power monitoring unit (100; column 5, line 66 thru column 6, line 1) that calculates the root mean squared voltage to be used to adjust the operation or configuration of the device (column 3, line 57 thru column 4, line 4 and column 7, lines 35-36 and column 8, lines 9-19). Loucks has the additional benefit of having the capability of minimizing storage



Art Unit: 2116

space on the device in addition to processing power required by a master device (column 3, lines 48-51).

It would have been obvious to one of ordinary skill of the art having the teachings of Fung and Loucks at the time the invention was made, to modify the local monitoring circuitry of Fung to include the ability to measure a root mean squared power consumption value as taught by Loucks. One of ordinary skill in the art would be motivated to make this combination of having root mean squared value measurement capability in view of the teachings of Loucks, as doing so would give the added benefit of having the capability of minimizing storage space on the device in addition to processing power required by a master device (as taught by Loucks above).

As to claim 13, Fung in combination with Loucks taught the apparatus of claim 12, as shown above. Fung further teaches the apparatus further comprising: a power measurement link (Link as shown in figure 12) between the local monitoring circuitry (activity indicator generator 406) and the CPU (CPU of management module 430 via server module control algorithm and unit 432) for monitoring power consumption at the CPU (paragraph 107, 24-35).

As to claim 14, Fung in combination with Loucks taught the apparatus of claim 13, as shown above. Fung further teaches the apparatus further comprising: an interrupt line (Link as shown in figure 12) between the local monitoring circuitry (activity indicator generator 406) and the CPU (CPU of management module 430) for transmitting interrupt messages that enable and disable the power throttling mode at the CPU (paragraph 107).

As to claim 15, Fung in combination with Loucks taught the apparatus of claim 13, as shown above. Fung further teaches the apparatus further comprising: a special register

Art Unit: 2116

(frequency control register 205) writable by the local monitoring circuitry (activity monitor of CPU 201) and readable by the CPU to enable and disable the power throttling mode at the CPU (paragraph 122).

As to claim 17, Fung discloses a method for power management of a rack of computers, the method comprising: monitoring power consumption (via activity indicator generator 406) at each computer (402) in the rack (as argued in previous Office Action; paragraph 104); receiving polling messages at each computer in the rack (Fung discloses the SM control unit and algorithm 432 “retrieving” activity indicators from the activity indicators 406 which necessitates requesting and/or polling; paragraph 104, lines 4-15 and paragraph 107); and, responding to the polling messages by transmitting an activity indicator or power consumption value from each computer in the rack to a single centralized power manager (SM control unit and algorithm 432) (Fung further discloses activity indicators being retrieved from the local monitoring circuitry 406 and transmitted to SM control unit and algorithm 432 to be used for adjusting power management modes which is inclusive of power throttling; paragraphs 104, 105, 107-108 and 190-247), and wherein there is hysteresis between entry and exit of the power throttling mode such that power consumption values which induce throttling are higher than power consumption values at which throttling is removed (paragraph 310, lines 200-207 on page 43, column 1 and paragraph 337, lines 74-80 on page 50, column 2).

Fung fails to disclose the power value measured and sent to the single centralized power manager is a root mean squared power consumption value.

Loucks teaches a power monitoring unit (100; column 5, line 66 thru column 6, line 1) that calculates the root mean squared voltage to be used to adjust the operation or configuration

Art Unit: 2116

of the device (column 3, line 57 thru column 4, line 4 and column 7, lines 35-36 and column 8, lines 9-19). Loucks has the additional benefit of having the capability of minimizing storage space on the device in addition to processing power required by a master device (column 3, lines 48-51).

5           It would have been obvious to one of ordinary skill of the art having the teachings of Fung and Loucks at the time the invention was made, to modify the local monitoring circuitry of Fung to include the ability to measure a root mean squared power consumption value as taught by Loucks. One of ordinary skill in the art would be motivated to make this combination of having root mean squared value measurement capability in view of the teachings of Loucks, as  
10       doing so would give the added benefit of having the capability of minimizing storage space on the device in addition to processing power required by a master device (as taught by Loucks above).

          As to claim 18, Fung in combination with Loucks taught the method of claim 17, as shown above. Fung further teaches the method further comprising: transmitting messages via an  
15       out-of-band link (Again using the server rack argument above, Fung discloses that all of the management links between the computers [server modules] and the CCPM [management module] are OOB links [paragraphs 84, 85, 90 and 151-152]) from the centralized power manager (management module 316) to local circuitry (core logic 330 containing power management unit 332) at said determined computers (server modules 302) to enable and disable  
20       the CPU (320) power throttling mode at those computers (paragraphs 107 and 110-113); and applying a configurable set of rules (paragraph 189) to the power consumption data (activity

Art Unit: 2116

indicator data structure 410) to determine at which computers to enable and disable a CPU power throttling mode (paragraphs 107 and 110-113).

As to claim 19, Fung in combination with Loucks taught the method of claim 18, as shown above. Fung further teaches the method further discloses the method of claim 18, wherein  
5 the rack of computers comprises a rack of servers (rack mounted server system 50).

As to claim 22, Fung discloses a power management apparatus for managing power usage of a rack of computers, the apparatus comprising: means for (440) transmitting polling messages to the local monitoring circuitry (activity indicator generator 406) (Fung discloses the SM control unit and algorithm 432 “retrieving” activity indicators from the activity indicators  
10 406 which necessitates requesting and/or polling; paragraph 104, lines 4-15 and paragraph 107); means for (442) receiving responses to the polling means for receiving messages from the local monitoring circuitry (paragraph 107), wherein the responses include activity indicator or power consumption values (paragraphs 104 and 107); means for (SM control unit and algorithm 432) determining at which computers to enable and disable a CPU power throttling mode (paragraph  
15 107); and, means for (AMPC bus) transmitting messages to said determined computers to enable and disable the CPU power throttling mode (Fung further discloses activity indicators being retrieved from the local monitoring circuitry 406 and transmitted to SM control unit and algorithm 432 to be used for adjusting power management modes which is inclusive of power throttling; paragraphs 104, 105, 107-108 and 190-247), and wherein there is hysteresis between  
20 entry and exit of the power throttling mode such that power consumption values which induce throttling are higher than power consumption values at which throttling is removed (paragraph 310, lines 200-207 on page 43, column 1 and paragraph 337, lines 74-80 on page 50, column 2).

Art Unit: 2116

Fung fails to disclose the power value measured and sent to the single centralized power manager is a root mean squared power consumption value.

Loucks teaches a power monitoring unit (100; column 5, line 66 thru column 6, line 1) that calculates the root mean squared voltage to be used to adjust the operation or configuration of the device (column 3, line 57 thru column 4, line 4 and column 7, lines 35-36 and column 8, lines 9-19). Loucks has the additional benefit of having the capability of minimizing storage space on the device in addition to processing power required by a master device (column 3, lines 48-51).

It would have been obvious to one of ordinary skill of the art having the teachings of Fung and Loucks at the time the invention was made, to modify the local monitoring circuitry of Fung to include the ability to measure a root mean squared power consumption value as taught by Loucks. One of ordinary skill in the art would be motivated to make this combination of having root mean squared value measurement capability in view of the teachings of Loucks, as doing so would give the added benefit of having the capability of minimizing storage space on the device in addition to processing power required by a master device (as taught by Loucks above).

As to claim 23, Fung in combination with Loucks taught the apparatus of claim 22, as shown above. Fung further teaches the apparatus wherein the means for transmitting messages comprise out-of-band links to the local monitoring circuitry (Again using the server rack argument above, Fung discloses that all of the management links between the computers [server modules] and the CCPM [management module] are OOB links [paragraphs 84, 85, 90 and 151-152])).

Art Unit: 2116

Claims 16, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fung (as cited hereinabove) in view of Brock et al. (U.S. Patent No. 6,836,849 B2) (hereinafter referred to as Brock).

As to claim 16, Fung discloses a central power management apparatus for a rack of  
5 computers, the apparatus comprising: a management module (430) coupled via an out-of-band link to local monitoring circuitry (SM control unit and algorithm 432) at each computer (402) in the rack (as argued in previous Office Action; paragraphs 40-41 and 104), wherein the management module (430) is configured to transmit polling messages to the local monitoring circuitry (406), receive an activity indicator or power consumption value from the local  
10 monitoring circuitry (406) in response to the polling messages, determine at which computers to enable and disable a CPU power throttling mode, and transmit messages to said determined computers to enable and disable the CPU power throttling mode (Fung discloses the SM control unit and algorithm 432 “retrieving” activity indicators which necessitates requesting and/or polling; paragraph 104, lines 4-15 and paragraph 107) (Fung further discloses activity indicators  
15 being retrieved from the local monitoring circuitry 406 and transmitted to SM control unit and algorithm 432 to be used for adjusting power management modes which is inclusive of power throttling; paragraphs 104, 105, 107-108 and 190-247).

Although Fung discloses using measured temperatures (via sensors 204) within local monitoring circuitry and using said measured temperature to manage power by throttling  
20 (paragraph 122 and paragraph 310, lines 200-207 on page 43, column 1), Fung fails explicitly teach *the management module being configured to receive temperature values from the local monitoring circuitry.*

Art Unit: 2116

Brock teaches a server rack system comprising a controller (201) that receives measured temperatures (207) from processors (103-106) and uses said measured temperatures to manage power via clock control (column 4, lines 30-55 and column 6, lines 39-62). Brock has the additional benefit of managing power and temperature both locally and globally within the system (column 4, lines 1-29).

It would have been obvious to one of ordinary skill of the art having the teachings of Fung and Brock at the time the invention was made, to modify apparatus of Fung to include the management module receiving temperatures from local monitoring circuitry as taught by Brock. One of ordinary skill in the art would be motivated to make this combination to include the management module receiving temperatures from local monitoring circuitry in view of the teachings of Brock, as doing so would give the added benefit of managing power and temperature both locally and globally within the system (as taught by Brock above).

As to claim 20, Fung discloses a centralized method for managing power consumption of a rack of computers, the method comprising: transmitting polling messages to local monitoring circuitry (activity indicator generator 406) at each of the computers (402) in the rack (Fung discloses the SM control unit and algorithm 432 “retrieving” activity indicators from the activity indicators 406 which necessitates requesting and/or polling; paragraph 104, lines 4-15 and paragraph 107); receiving responses to the polling messages from the local monitoring circuitry (406) at each of the computers (402) in the rack, wherein the responses include activity indicator or power consumption values (paragraph 107); determining at which computers to enable and disable a CPU power throttling mode; and, transmitting messages to said determined computers to enable and disable the CPU power throttling mode (Fung further discloses activity indicators

Art Unit: 2116

being retrieved from the local monitoring circuitry 406 and transmitted to SM control unit and algorithm 432 to be used for adjusting power management modes which is inclusive of power throttling; paragraphs 104, 105, 107-108 and 190-247).

Although Fung discloses using measured temperatures (via sensors 204) within local  
5 monitoring circuitry and using said measured temperature to manage power by throttling (paragraph 122 and paragraph 310, lines 200-207 on page 43, column 1), Fung fails explicitly teach *the management module being configured to receive temperature values from the local monitoring circuitry.*

Brock teaches a server rack system comprising a controller (201) that receives measured  
10 temperatures (207) from processors (103-106) and uses said measured temperatures to manage power via clock control (column 4, lines 30-55 and column 6, lines 39-62). Brock has the additional benefit of managing power and temperature both locally and globally within the system (column 4, lines 1-29).

It would have been obvious to one of ordinary skill of the art having the teachings of  
15 Fung and Brock at the time the invention was made, to modify method of Fung to include the management module receiving temperatures from local monitoring circuitry as taught by Brock. One of ordinary skill in the art would be motivated to make this combination to include the management module receiving temperatures from local monitoring circuitry in view of the teachings of Brock, as doing so would give the added benefit of managing power and  
20 temperature both locally and globally within the system (as taught by Brock above).



Art Unit: 2116

As to claim 21, Fung in combination with Brock taught the method in claim 20, as shown above. Fung further teaches the method wherein the rack of computers comprises a rack of servers (paragraph 40).

5

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-3 and 5-15, 17-19, 22 and 23 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed June 21, 2007, in re claims 16, 20 and 21, have been fully considered but they are not persuasive *and* are moot in view of new grounds of rejection.

10

In re independent claim 16, the Applicant argues that Fung does not teach the element of "...wherein the management module is configured to...receive temperature values from the local monitoring circuitry in response to the polling messages..." (REMARKS, page 10, lines 5-21).

The Examiner disagrees. Fung teaches a server module (SM) control unit and algorithm (432) "retrieving" activity indicators which necessitates requesting and/or polling (paragraph 104, lines 4-15 and paragraph 107). Fung further discloses activity indicators being retrieved from the local monitoring circuitry (406) and transmitted to SM control unit and algorithm (432) to be used for adjusting power management modes which is inclusive of power throttling (paragraphs 104, 105, 107-108 and 190-247). One having ordinary skill in the art would know that temperature is

15

20

commonly used as an activity indicator within computer systems. Furthermore, Fung does teach using sensed temperatures (via sensor 204) at the CPU of every server module to be used for power management via frequency control (paragraph 122 and paragraph 310, lines 200-207 on page 43, column 1). Although Fung does not explicitly disclose "*the management module being*

Art Unit: 2116

*configured to receive temperature values from the local monitoring circuitry in response to the polling messages,”* it would have been obvious to one of ordinary skill of the art having the teachings of Fung to adapt the management module (430) of Fung to have the ability to use the sensed temperature (at sensor 204) as any other activity indicator to manage power via throttling.

5 Therefore, Fung remains rejected under 35 USC § 103 over Fung.

Likewise, independent claim 20 comprises similar limitations of those found in claim 16 and remains rejected as argued hereinabove. Furthermore, dependent claim 21 also remains rejected based upon dependence to independent claim 20.

10

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to James Sugent whose telephone number is (571) 272-5726. The Examiner can normally be reached on 8AM - 4PM.

15 If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rehana Perveen can be reached on (571) 272-3676. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished  
20 applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would

Art Unit: 2116

like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800) 786-9199 (IN USA OR CANADA) or (571) 272-1000.

James F. Sugent

5 Patent Examiner, Art Unit 2116

August 20, 2007

  
REHANA PERVEEN  
SUPERVISORY PATENT EXAMINER  
8/24/07